FOREST STATISTICS REVIEW 1983 - 84

Alberta

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FOREWORD

This report presents statistical detail pertaining to the activities of the Alberta Forest Service (AFS) during the 1982-83 fiscal year. Summary tables are provided for comparative analysis and observations of trends. Industrial statistics are provided where they are helpful in obtaining a total provincial overview. It should be noted that the Forest Protection Branch operates according to the Calendar year as opposed to the April 1 to March 31 Fiscal Year.

ACKNOWLEDGMENTS

Tabular and graphic materials in this report were compiled by the respective branches of the AFS Although monitoring of industrial reforestation activities is the responsibility of the Timber Management Branch, tabular data has been included in the Reforestation section of the report to provide a total reforestation overview.

A. TIMBER MANAGEMENT

1. Introduction

Timber production from public lands in 1983-84 excluding woodchips and slabs totalled 7 314 091 cubic metres (m^3), an increase of 1 754 446 m^3 from the previous year. Coniferous lumber and plywood logs accounted for 5 547 369 m^3 as compared with 4 122 333 m^3 produced in 1982-83.

2. Timber Management Planning

The total number of active timber dispositions for this year is 40 943. Forest Management Agreements, Timber Licences and Commercial Timber Permits (CTP) account for 469 dispositions and Local Timber Permits (LTP) and Tree Tags account for 40 474. Table A1 summarizes the number of active timber dispositions over the past 10 years.

Table A1

TEN YEAR SUMMARY
TIMBER DISPOSITIONS
1974 - 1984

Year	Miscellaneous & Local Timber Permits and Tree Tags (TM66s)	Timber Licences and Commercial Timber Permits	Coniferous Timber Quotas and Deciduous Timber Allocations	Forest Management Agreements	TOTAL
1974-75	13 199	517	154	5	13 875
1975-76	15 476	480	142	6	16 104
1976-77	15 282	450	145	6	15 883
1977-78	19 572	469	138	6	20 185
1978-79	26 842	385	135	6	27 368
1979-80	31 294	386	135	6	31 821
1980-81	44 787	394	143	7	45 331
1981-82	41 707	410	139	7	42 263
1982-83	42 198	427	148	7	42 773
1983-84	40 474	462	144	7	41 087
Ten Year Average	29 083	438	142	6	29 669

2a Forest Management Agreements (FMA)

Table A2 lists the companies that have entered into FMAs with the Province of Alberta. The table shows the annual allowable cut (AAC) allocated under each agreement.

Table A2

FOREST MANAGEMENT AGREEMENTS

Forest Management Agreement Holder	Allowable Annual Cut	Management Plan Status
Alberta Energy Co. Blue Ridge	* 467 000 m^3 coniferous	Part 1 of Detailed Plan was submitted December, 1979 and is currently under review.
British Columbia Forest Products Ltd. Whitecourt	1 724 000 m^3 coniferous	Preliminary Plan approved September 1981.
Canadian Forest Products Ltd. Grande Prairie	388 000 m^3 coniferous	Detailed Plan submitted March 1, 1981 has received approval.
Canadian Forest Products (Dell Acres) Hines Creek	9 000 m^3 coniferous	Detailed Plan was approved October 1, 1975.
Procter and Gamble Inc. Grande Prairie	1 290 000 m^3 coniferous	Detailed Plan was approved January 17, 1978.
St. Regis (Alberta) Ltd. Hinton	1 052 000 m^3 coniferous	Second Detailed Plan was approved in 1979.
Weldwood of Canada Ltd. Slave Lake	* 241 000 m^3 deciduous	This FMA was previously held by Alberta Aspen Board Ltd. and is currently under revision. Totally new management plans will be required under the revised agreement.
TOTAL	5 171 000 m^3	

* Preliminary harvest estimates - subject to revision.

2b Coniferous Timber Quota and Deciduous Timber Allocation Planning

No quotas were sold in 1983-84. Four quotas were issued in 1983-84. Of the four issued, one quota was granted in the Whitecourt Forest. The remaining quotas were issued as a result of three amalgamations. Two amalgamations were in the Whitecourt forest and one was in the Edson forest. The Whitecourt amalgamations saw five quotas amalgamated under two new quotas. The Edson amalgamation had three quotas amalgamated under one new quota.

Table A3

CONIFEROUS TIMBER QUOTA AND DECIDUOUS TIMBER ALLOCATION
CURRENT STATUS AS OF MARCH 31, 1984

Forest	Coniferous Timber Quota		Deciduous Timber Allocation	
	(number of)	(AAC in m^3)	(number of)	(AAC in ha)
Athabasca	6	166 459	-	-
Bow/Crow	14	224 104	-	-
Edson	10	74 579	2	837
Footner Lake	10	479 682	-	-
Grande Prairie	1	70 132	-	-
Lac La Biche	7	107 943	-	-
Peace River	9	287 364	-	-
Rocky/Clearwater	29	163 087	1	186
Slave Lake	29	644 376	2	2 667
Whitecourt	22	493 827	2	646
TOTAL	137	2 711 553	7	4 336

3. Woods Operations

Timber harvesting operations on public land must be conducted in accordance with an approved operating plan (AOP). Field staff approved and/or checked 211 timber licence AOPs and commercial timber permit AOPs. Staff also conducted 2 309 woods inspections related to the approved AOPs.

4. Scaling

During this year 559 sample loads were check scaled. The total volume check scaled in 1983-84 was 22 274 m^3.

During the year, 158 scaling permits and 14 scaling licences were issued.

5. Timber Audits

Fifty-eight audits of timber volumes produced by industry were completed during the year. These audits included quadrant cutoffs for 14 quotas.

Table A4

CONIFEROUS QUOTA SIZE CLASS BY FOREST AS OF MARCH 31, 1984

Quota Size Class	Athabasca		Bow/Crow		Edson		Footner Lake		Grande Prairie		Lac La Biche		Peace River		Rocky/ Clearwater		Slave Lake		Whitecourt		Total	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
0 – 1 000 m^3																						
Number	0	0.0	0	0.0	2	1.5	0	0.0	0	0.0	1	0.7	1	0.7	7	5.1	2	1.5	1	0.7	14	10.2
Volume	0	0.0	0	0.0	969	0.0	0	0.0	0	0.0	516	0.0	506	0.0	3780	0.1	1052	0.0	564	0.0	7387	0.3
1 000 – 5 000 m^3																						
Number	1	0.7	4	2.9	3	2.2	1	0.7	0	0.0	3	2.2	1	0.7	13	9.5	3	2.2	9	6.6	38	27.7
Volume	2547	0.1	11612	0.4	6952	0.3	4581	0.2	0	0.0	6339	0.2	4071	0.2	38316	1.4	6083	0.2	29208	1.1	109709	4.0
5 000 – 10 000 m^3																						
Number	0	0.0	2	1.5	2	1.5	1	0.7	0	0.0	1	0.7	0	0.0	4	2.9	4	2.9	2	1.5	16	11.7
Volume	0	0.0	15789	0.6	14223	0.5	6574	0.2	0	0.0	7030	0.3	0	0.0	28087	1.0	28344	1.0	14818	0.5	114865	4.2
10 000 – 20 000 m^3																						
Number	0	0.0	4	2.9	2	1.5	1	0.7	0	0.0	0	0.0	0	0.0	3	2.2	5	3.6	3	2.2	18	13.1
Volume	0	0.0	53617	2.0	28939	1.1	15679	0.6	0	0.0	0	0.0	0	0.0	33222	1.2	78396	2.9	38902	1.4	248755	9.2
20 000 – 40 000 m^3																						
Number	4	2.9	2	1.5	1	0.7	3	2.2	0	0.0	1	0.7	4	2.9	2	1.5	11	8.0	2	1.5	30	21.9
Volume	115865	4.3	52581	1.9	23496	0.9	83961	3.1	0	0.0	24271	0.9	98185	3.6	59682	2.2	281707	10.4	56237	2.1	795985	29.4
40 000 – 60 000 m^3																						
Number	1	0.7	2	1.5	0	0.0	1	0.7	0	0.0	0	0.0	2	1.5	0	0.0	3	2.2	2	1.5	11	8.0
Volume	48047	1.8	90505	3.3	0	0.0	50594	1.9	0	0.0	0	0.0	111272	4.1	0	0.0	153719	5.7	107393	4.0	561530	20.7
60 000 – 80 000 m^3																						
Number	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	1	0.7	1	0.7	0	0.0	0	0.0	1	0.7	4	2.9
Volume	0	0.0	0	0.0	0	0.0	0	0.0	70132	2.6	69787	2.6	73330	2.7	0	0.0	0	0.0	75966	2.8	289215	10.7
80 000 – 100 000 m^3																						
Number	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	2	1.5	4	2.9
Volume	0	0.0	0	0.0	0	0.0	98596	3.6	0	0.0	0	0.0	0	0.0	0	0.0	95075	3.5	170739	6.3	364410	13.4
> 100 000 m^3																						
Number	0	0.0	0	0.0	0	0.0	2	1.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	1.5
Volume	0	0.0	0	0.0	0	0.0	219697	8.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	219697	8.1
TOTAL NO.	6	4.4	14	10.2	10	7.3	10	7.3	1	0.7	7	5.1	9	6.6	29	21.2	29	21.2	22	16.1	137	100
TOTAL VOL.	166459	6.1	224104	8.3	74579	2.8	479682	17.7	70132	2.6	107943	4.0	287364	10.6	163087	6.0	644376	23.8	493827	18.2	2711553	100

Table A5

TIMBER DISPOSITIONS HANDLED

Disposition Type	Granted	Sold	Not Sold	Offered For Sale	Total Issued
Coniferous Timber Quota	4	-	-	-	4
Deciduous Timber Allocation	-	-	-	-	-
Coniferous Timber Licence	41	-	-	-	41
Deciduous Timber Licence	5	-	-	-	5
Commercial Timber Permit					
Coniferous (green)	5	25	-	25	30
Coniferous (dead)	14	7	2	9	21
Deciduous (green)	2	-	2	2	2
Local Timber Permits	-	1 761	-	-	1 761
TM66 (Tree Tags)	-	38 713	-	-	38 713
Custom Sawmill and Other Miscellaneous Permits	-	23	-	-	23
TOTAL	71	40 529	4	36	40 600

A total of 33 sales were advertised in 1983-84. 14 of these sales were for Commercial Timber Permits or Deciduous Timber Allocations. The remaining 19 sales were for miscellaneous items such as Local Timber Permit draws or sales of seized wood.

Table A6

SUMMARY OF TIMBER OPERATIONS ON PUBLIC LANDS

Product	Species	Forest Management Agreements Timber Licences, Commercial Permits	Local Timber Permits, Tree Tags	Total Product Volume	Value per unit $	Total Value $
Lumber and Plywood Logs (m^3)	Coniferous	5 547 171	274 282	5 821 453	50.36	293 168 373.08
	Deciduous	305 372	46 012	351 384	39.11	13 742 628.24
Round Timber (m^3)	Coniferous	53 891	133 894	187 785	76.30	14 327 995.50
	Deciduous	-	468	468	76.30	35 708.40
Pulpwood (m^3)	Coniferous	687 711	10 338	698 049	17.45	12 180 955.05
	Deciduous	116 567	1 326	117 893	17.45	2 057 232.85
Woodchips (m^3)	Coniferous	1 303 947	-	1 303 947	11.03	14 382 535.41
Fuelwood (m^3)	Coniferous	174	71 954	72 128	20.77	1 498 098.56
	Deciduous	26	52 262	52 288	20.77	1 086 021.76
Railway Ties (m^3)	Coniferous	12 643	-	12 643	60.12	760 097.16
Slabs (m^3)	Coniferous	593	-	593	37.39	22 172.27
Lath (m^3)	Coniferous	-	-	-	454.55	-
Christmas Trees (number)		735	41 870	42 605	3.00	127 815.00
Transplants (number)		-	20 842	20 842	2.00	41 684.00
TOTAL VOLUME * (m^3)	Coniferous	6 301 590	490 468	6 792 058		336 509 726.03
	Deciduous	421 965	100 068	522 033		16 921 591.25
		6 723 555	590 536	7 314 091		353 431 317.28

* Excludes woodchips and slabs

Table A7

TEN-YEAR PRODUCTION SUMMARY

Product		1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	Average
Lumber and Plywood Logs												
Coniferous	(m^3)	1 705 203	2 140 853	2 579 461	2 882 231	2 936 284	3 910 597	3 782 445	4 063 284	4 122 333	5 821 453	3 394 414
Deciduous	(m^3)	52 354	24 166	2 859	11 632	24 993	17 949	106 206	131 706	116 021	351 384	83 927
Round Timber												
Coniferous	(m^3)	132 381	97 268	181 163	216 821	81 217	170 732	144 031	141 747	158 063	187 785	151 121
Deciduous	(m^3)	872	1 350	-	74	401	611	4 166	8 723	2 753	468	1 942
Pulpwood												
Coniferous	(m^3)	2 211 314	1 728 864	1 579 038	1 639 787	1 545 078	1 580 178	1 326 305	1 111 539	1 010 501	698 049	1 443 065
Deciduous	(m^3)	-	2 125	2 520	10 809	2 035	6 774	94	3 456	1 802	117 893	14 751
Woodchips	(m^3)	239 517	160 409	316 577	538 746	879 560	798 069	790 000	859 625	853 307	1 303 947	673 976
Fuelwood												
Coniferous	(m^3)	7 602	8 383	29 346	28 768	41 964	36 618	45 158	47 312	79 068	72 128	39 635
Deciduous	(m^3)	5 551	2 963	20 038	18 345	18 134	27 807	21 311	38 229	51 531	52 288	25 620
Railway Ties	(m^3)	33 744	48 396	35 224	27 582	21 702	13 663	23 520	17 817	17 996	12 643	25 229
Slabs	(m^3)	21	377	354	344	319	65	15	237	225	593	255
Lath	(m^3)	1 620	1 837	-	2 409	301	82	65	220	63	-	660
Christmas Trees	(number)	16 737	18 367	17 702	23 902	30 727	34 291	37 396	47 495	50 453	42 605	31 968
Transplants	(number)	16 201	27 080	37 644	28 507	61 377	215 158	36 384	47 487	15 941	20 842	50 659
TOTAL VOLUME*	(m^3)	4 150 640	4 056 206	4 429 649	4 838 456	4 672 109	5 765 011	5 453 301	5 564 033	5 560 131	7 314 091	5 180 363

*Excludes woodchips and slabs.

Table A8

TEN-YEAR SUMMARY
ACTUAL AREA CUTOVER BY TIMBER HARVESTING OPERATIONS
1974-1984

	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	TOTAL
Athabasca	21.7	80.9	1.6	66.0	1 217.4	1 526.8	913.6	229.7	456.7	843.7	5 358.1
Bow/Crow	388.8	488.1	1 017.0	779.3	983.8	932.5	1 187.1	1 302.6	626.2	1 119.3	8 824.7
Edson	4 436.8	4 355.7	4 005.2	2 972.6	3 331.5	4 454.8	4 230.7	2 776.6	4 774.6	2 915.1	38 253.6
Footner Lake	934.6	1 978.1	3 367.7	2 376.0	1,288.4	1 787.2	2 212.3	3 345.6	2 793.0	4 517.8	24 600.7
Grande Prairie	5 373.1	6 142.3	4 704.3	5 413.1	5 182.3	4 632.3	4 444.9	4 459.2	6 541.4	6 258.3	53 151.2
Lac La Biche	723.5	860.2	663.7	857.1	1 090.7	1 467.6	339.4	709.1	717.2	261.4	7 689.9
Peace River	610.9	1 694.6	988.5	939.3	1 760.6	2 056.2	2 249.8	1 049.1	1 565.0	2 392.4	15 306.4
Rocky/Clearwater	882.3	1 079.2	947.2	1 045.5	1 125.2	1 422.3	998.4	700.2	1 065.9	1 094.4	10 360.6
Slave Lake	4 015.6	3 926.8	3 516.0	4 658.1	3 420.4	4 414.1	4 377.6	2 919.2	5 329.0	3 722.6	40 299.4
Whitecourt	443.5	1 015.1	1 488.2	2 993.4	3 393.2	3 562.5	2 436.2	3 054.4	3 861.6	5 517.3	27 765.4
TOTAL AREA (ha)	17 830.8	21 621.0	20 699.4	22 100.4	22 793.5	26 256.3	23 390.0	20 545.7	27 730.6	28 642.3	231 610.0

B. REFORESTATION AND RECLAMATION

1. Introduction

The Reforestation and Reclamation Branch is responsible for all AFS reforestation projects, reclamation projects, the provincial forest genetics and tree improvement programs and the Pine Ridge Forest Nursery. The following summarizes the activities of each section during 1983-84.

2. Reforestation

Reforestation surveys were completed on 27 933 hectares (ha) of cutover land including 10 782 ha of post-harvest surveys and 17 151 ha of regeneration surveys. Of the area surveyed for regeneration, 76 percent was found satisfactorily stocked according to existing provincial standards (see Table B1).

Silviculture treatments completed by the AFS included mechanical scarification of 8 118 ha, seeding of 5 617 ha, planting of 7 547 ha (10 616 495 seedlings) and thinning of 218 ha. Cone collection totalled 1 179 hectolitres (hl) for pine, 814 hl for spruce and 143 hl for Douglas fir (Table B3).

The Maintaining Our Forests Afforestation Program (MOF), funded through the Alberta Heritage Savings Trust Fund, included: 41 580 ha of stocking surveys (Table B8); 8 527 ha of land cleared; 8 184 ha of scarification; 11 103 ha (15 596 722 seedlings) planted; 3 715 hl of cones collected; 1 315 ha aerially seeded; and 503 ha thinned (Table B7).

3. Reclamation

During the year, 39 operational reclamation projects were completed in the Green Area. These include clean-up and reclamation by revegetation of: abandoned oil and gas wellsites, campsites, sawmill sites, unauthorized vehicle and garbage dumping sites, bridge sites, river and creek crossings and sand and gravel pits. Slope stabilization was completed on approximately 81 ha of non-linear land disturbances and on 41 km of linear land disturbances (abandoned access roads, trails, seismic and transmission lines). Of the 39 projects, 10 were funded through the Alberta Heritage Savings Trust Fund and the remainder through the Department's regular budget.

Work continued on the joint government/industry sponsored research program on suitability of woody species for reclamation. Field trials established to study the adaptability of selected native and exotic woody species to oil sands mine wastes at Mildred Lake near Fort McMurray were maintained. The study of the adaptability of native and exotic grasses and legumes to coal disturbances in the Eastern Slopes was also maintained.

4. Genetics and Tree Improvement

Work continued on the cooperative genetics and tree improvement program. A site plan for a seed orchard complex to be located near Grande Prairie was prepared by B.C. Forest Products Ltd., Canadian Forest Products Ltd. and Procter & Gamble Cellulose Ltd., who are jointly responsible for developing and operating the seed orchard. A land search for another seed orchard to be developed near Whitecourt was completed and a parcel of crown land selected. Maintenance was carried out jointly with participating FMA holders on eight lodgepole pine progeny test research plantations.

Three research plantations were established at various locations in the province and the planting of the white spruce seed orchard at Pine Ridge was completed. Maintenance and assessment of numerous research plantations established in earlier years was carried out and site selection was done for four additional experimental areas. Twenty-eight superior white spruce trees were located in natural stands in northern Alberta. Expansion of the clone bank at Pine Ridge continued with the addition of 41 white spruce clones. Thirty-one new seedlots were added to the genetics seed bank and 329 seedlots were germination tested. Experimental planting stock production consisted of 23 280 seedlings, 206 grafts and 3 650 rooted cuttings. Several research studies on flowering and seed production, vegetative propagations, pollen management technology and plant propagation were continued or completed.

Funding through the Alberta Heritage Savings Trust Fund allowed for an expanded program in genetics and tree improvement during the year.

5. Pine Ridge Forest Nursery

The combined containerized and bareroot (conventional) seedlings shipped in 1983 totalled 32 069 252 seedlings. This is the largest number shipped in one year since production began in 1978. For the first time, two complete crops of container seedlings (20 223 917 seedlings) were grown in the greenhouses. There were 22 520 116 containerized seedlings shipped for planting. The bareroot seedling inventory now stands at 40 905 292 seedlings in the fields. A total of 9 549 136 bareroot seedlings were shipped for planting in 1983 and another 7 368 605 were lifted for shipping in 1984 (Table B10).

Underground, root cellar-type seedling storage facilities were constructed to increase bareroot storage capacity. Paving of the building site was completed and genetics facility expansion was begun.

The Research and Investigation Program continues to provide technical assistance in developing production techniques and monitoring seedling growth rates. They also worked in conjunction with the Research Branch on various bareroot production techniques.

The nursery processed 6 757 hl of pine cones, 11 330 hl of white spruce cones, 143 hl of Douglas-fir cones and 10 hl of black spruce cones. The total seed inventory increased by 7 349 kg to a total of 50 434 kg (Table B9).

Table B1

REGENERATION SURVEYS

FOREST	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (ha)
	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	
Athabasca	344	-	344	383	107	490	834
Bow/Crow	814	197	1 011	174	90	264	1 275
Edson	575	16	591	5 072	1 312	6 384	6 975
Footner Lake	1 893	360	2 253	866	216	1 082	3 335
Grande Prairie	1 197	199	1 396	3 852	145	3 997	5 393
Lac La Biche	1 262	1 708	2 970	204	3	207	3 177
Peace River	708	223	931	1 665	27	1 692	2 623
Rocky/Clearwater	358	11	369	316	134	450	819
Slave Lake	3 262	974	4 236	766	465	1 231	5 467
Whitecourt	2 601	449	3 050	1 729	713	2 442	5 492
TOTAL	13 014	4 137	17 151	15 027	3 212	18 239	35 390

Table B2

TEN-YEAR SUMMARY
REGENERATION SURVEYS
1974-1984

YEAR	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (ha)
	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	
1974-75	6 541	3 404	9 945	10 113	7 495	17 608	27 553
1975-76	12 750	6 091	18 841	10 788	5 401	16 189	35 030
1976-77	11 055	6 226	17 281	8 715	8 297	17 012	34 293
1977-78	10 114	8 841	18 955	7 295	9 702	16 998	35 953
1978-79	10 271	2 696	12 967	12 126	8 779	20 905	33 872
1979-80	10 315	3 154	13 469	13 620	6 938	20 558	34 027
1980-81	8 322	1 614	9 936	17 237	6 083	23 321	33 257
1981-82	9 701	2 874	12 575	14 262	3 668	17 930	30 505
1982-83	8 434	2 600	11 034	13 893	3 090	16 983	28 017
1983-84	13 014	4 137	17 151	15 027	3 212	18 239	35 390

Table B3

REFORESTATION WORK CONDUCTED BY THE ALBERTA FOREST SERVICE

FOREST	Scarification (ha)	Seeding (ha)	CONES COLLECTED			Thinning (ha)	SEEDLINGS PLANTED			
			Pine (hl)	Spruce (hl)	Other (hl)		Conventional (Number)	(ha)	Continer (Number)	(ha)
Athabasca	518	1 145	-	5	-	-	450 775	(315)	32 000	(241)
Bow/Crow	1 141	793	-	-	143	-	471 464	(452)	717 236	(689)
Edson	543	67	21	-	-	-	289 910	(176)	773 476	(412)
Footner Lake	838	1 315	-	-	-	-	-	-	2 039 543	(1 233)
Grande Prairie	1 275	931	1 158	128	-	-	-	-	763 400	(453)
Lac La Biche	326	87	-	-	-	-	1 396 339	(979)	99 654	(77)
Peace River	46	-	-	-	-	-	283 516	(236)	-	-
Rocky/Clearwater	413	154	-	-	-	-	-	-	453 758	(385)
Slave Lake	1 225	1 125	-	-	-	-	1 706 657	(1 243)	-	-
Whitecourt	1 793	-	-	681	-	218	121 412	(95)	1 017 355	(778)
TOTAL	8 118	5 617	1 179	814	143	218	4 720 073	(3 496)	5 896 422	(4 051)

Table B4

REFORESTATION AND SILVICULTURE IMPROVEMENT WORK BY THE FOREST INDUSTRY

FOREST	Scarification (ha)	Seeding (ha)	CONES COLLECTED		Thinning (ha)	SEEDLINGS PLANTED	
			Pine (hl)	Spruce (hl)		Conventional (Number) (ha)	Container (Number) (ha)
Athabasca	-	-	-	-	-	- -	106 000 (103.1)
Bow/Crow	212.6	-	-	-	-	- -	24 000 (48.3)
Edson	3 144.1	-	281.7	128.3	-	50 000 (37.6)	2 190 000 (1 885.3)
Footner Lake	1 378.0	1 245.0	-	835.5	-	- -	180 000 (118.0)
Grande Prairie	2 317.0	519.0	1 673.4	1 698.0	-	1 320 000 (711.9)	1 321 000 (814.0)
Lac La Biche	-	-	-	-	-	18 000 (14.5)	17 000 (14.2)
Peace River	-	-	-	135.1	-	- -	136 000 (197.7)
Rocky/Clearwater	551.6	-	161.0	-	-	- -	142 000 (113.6)
Slave Lake	1 684.5	1 304.2	-	2 386.1	-	171 200 (162.9)	64 000 (51.4)
Whitecourt	2 201.4	288.8	218.4	227.1	26.7	195 056 (261.3)	174 000 (233.4)
TOTAL	11 489.2	3 357.0	2 334.5	5 410.1	26.7	1 754 256 (1 188.2)	4 354 000 (3 579.0)

Table B5

TEN-YEAR SUMMARY
REFORESTATION BY THE ALBERTA FOREST SERVICE
1974-1984

Year	Scarification (ha)	Seeding (ha)	Thinning (ha)	Seedlings Planted			
				Conventional (Number)	(ha)	Container (Number)	(ha)
1974-75	6 296	2 047	72	**1 140 705	*	1 224 396	*
1975-76	6 697	1 885	104	***943 702	*	3 514 664	*
1976-77	4 757	2 898	546	****827 520	*	2 294 659	*
1977-78	6 684	4 782	111	224 478	*	2 378 730	*
1978-79	10 152	4 653	11	94 118	*	2 053 885	*
1979-80	6 324	3 325	15	-	*	4 898 809	*
1980-81	6 102	4 687	-	769 200	(500)	3 753 887	(3 032)
1981-82	5 964	3 127	251	5 941 149	(4 021)	2 246 687	(1 474)
1982-83	8 131	3 212	543	3 491 120	(2 659)	3 711 654	(2 739)
1983-84	8 118	5 617	218	4 720 073	(3 496)	5 896 422	(4 051)

* Information not available
** Includes 26 000 wildlings planted
*** Includes 82 032 wildlings planted
**** Includes 137 776 wildlings planted

Table B6

TEN-YEAR SUMMARY
REFORESTATION BY THE FOREST INDUSTRY
1974-1984

Year	Scarification (ha)	Seeding (ha)	Thinning (ha)	Seedlings Planted	
				Conventional (Number)	Container (Number)
1974-75	6 334	2 313	-	* 140 462	3 129 239
1975-76	10 840	2 862	40	1 329 364	1 732 820
1976-77	9 849	3 427	37	103 675	3 284 978
1977-78	10 292	5 328	20	-	4 253 860
1978-79	10 244	2 852	234	44 500	6 164 579
1979-80	8 819	2 218	256	-	5 430 000
1980-81	6 483	1 947	215	30 250	6 773 830
1981-82	7 604	1 573	383	142 500	6 484 160
1982-83	8 480	2 158	152	2 729 361	4 201 510
1983-84	11 489	3 357	27	1 754 256	4 218 055

* Includes 3 000 Wildlings Planted

Table B7

SUMMARY OF MAINTAINING OUR FORESTS PROGRAM REFORESTATION WORK

Forest	SITE PREPARATION		SEEDLINGS PLANTED		CONES COLLECTED			THINNING	AERIAL SEEDLING
	Land Clearing (ha)	Scarification (ha)	Conventional (Number) (ha)	Container (Number) (ha)	Pine (hl)	Spruce (hl)	Other Specify (hl)	(ha)	(ha)
Footner Lake	2 750	2 327	1 572 155 (968)	2 450 226 (1 537)	-	584	-	-	1 315
Lac La Biche	1 343	2 396	- -	3 552 173 (2 234)	-	646	-	-	-
Peace River	2 937	761	1 807 398 (1 570)	2 169 969 (1 748)	-	290	-	-	-
Slave Lake	1 497	2 700	- -	4 044 801 (3 046)	3	2 192	-	-	-
Edson	-	-	- -	- -	-	-	-	262	-
Rocky/Clearwater	-	-	- -	- -	-	-	-	241	-
Whitecourt	-	-	- -	- -	-	-	-	-	-
TOTAL	8 527	8 184	3 379 553 (2 538)	12 217 169 (8 565)	3	3 712	-	503	1 315

Table B8

MAINTAINING OUR FORESTS
REFORESTATION SURVEYS

Forest	STOCKING SURVEYS		
	Aerial Reconnaissance (ha)	Ground Reconnaissance (ha)	Ground Intensive (ha)
Footner Lake	20 150	-	3 368
Lac La Biche	-	790	986
Peace River	10 250	400	-
Slave Lake	2 000	2 936	700
TOTAL	32 400	4 126	5 054

Table B9

PINE RIDGE FOREST NURSERY SEED PROGRAM
1980-1982

Pine	1981-82	1982-83	1983-84
Cones received (hl)	5 458	17 973	6 854
Cones processed (hl)	6 056	12 241	6 757
Seed cleaned (kg)	1 589	2 660	1 674
Seed stored (kg)	8 293	11 061	10 727
Spruce			
Cones received (hl)	3	5 900	11 330
Cones processed (hl)	3	5 900	11 330
Seed cleaned (kg)	1	6 580	13 895
Seed stored (kg)	28 415	32 024	38 900
Other Species			
Cones received (hl)	-	-	159
Cones processed (hl)	-	-	159
Seed cleaned (kg)	-	-	150
Seed stored (kg)	-	-	807

Table B10

PINE RIDGE FOREST NURSERY BAREROOT AND CONTAINER SEEDLING PROGRAM
1981 - 1983

Program	1981-82		1982-83		1983-84	
	Pine	Spruce	Pine	Spruce	Pine	Spruce
BAREROOT PROGRAM						
Seedlings grown:						
Age 0 - 1.0 years	700 000	17 310 000	500 000	10 870 000	500 000	5 790 000
Age 1.0 - 2.0 years	1 436	9 301 500	986 800	21 939 400	1 470 300	14 365 100
Age 2.0 - 3.0 years	1 599 900	11 290 800	1 120	9 144 649	-	18 779 892
Seedlings lifted	1 237 555	7 769 855	1 110 400	9 442 082	643 900	6 724 705
Seedlings shipped	474 225	5 713 278	1 586 285	5 751 427	755 625	8 793 511
CONTAINER PROGRAM						
Seedlings grown	255 800	13 044 438	1 856 272	15 859 472	1 736 897	18 487 020
Seedlings shipped	951 961	7 749 229	810 195	12 890 431	1 980 806	20 539 310

C. FOREST LAND USE

1. Introduction

The following information pertains to forest land use activities of the Alberta Forest Service.

2. Range Management

The AFS managed 525 grazing dispositions outside the Rocky Mountain Forest Reserve and are summarized in Table C1.

Table C1

GREEN AREA GRAZING DISPOSITIONS
OUTSIDE THE ROCKY MOUNTAIN FOREST RESERVE

Forest	Active Dispositions[1]	Hectares	AUM	Annual Range Inspections	Renewal/New Reports Received	Current Range Improvement Projects
Athabasca	2	913	458	1	2	1
Bow/Crow	79	61 704	35 407	35	23	12
Edson	68	17 963	10 151	46	25	4
Footner Lake	–	–	–	–	–	–
Grande Prairie	79	60 238	24 024	54	23	10
Lac La Biche	15	3 552	2 186	8	6	2
Peace River	15	5 360	2 760	10	7	3
Rocky/Clearwater	130	71 277	30 781	100	36	24
Slave Lake	65	14 724	8 604	49	23	6
Whitecourt	72	21 537	12 475	56	18	12
TOTAL	525	257 268	126 846	359	163	74

[1]Dispositions include Grazing Leases, Forest Grazing Licenses, Grazing Permits and Head Tax Permits

In the Rocky Mountain Forest Reserve, the number of Animal Unit Months (AUM) of grazing utilized was 73 897 AUM. A total of 25 093 head of adult livestock grazed on 89 allotments. The revenue collected was $159,487.21 from 270 permits which were issued. These are summarized in Table C2.

Table C2

ROCKY MOUNTAIN FOREST RESERVE

Forest Ranger Districts	Allotments	Revenue	Permits	Adult Stock	AUM Utilized
B/C - DB1	12	37,440.00	53	6 312	18 441
B/C - DB2	5	8,022.05	16	1 360	4 097
B/C - DB4	9	14,262.40	9	1 580	6 460
B/C - DB5	12	13,318.43	18	1 462	4 802
B/C - DB6	43	78,948.39	164	12 810	36 315
R/C - DR5	8	7,495.94	10	955	3 782
TOTAL	89	159,487.21	270	24 479	73 897

There were 258 head of stock including calves found dead or missing by various means on the Forest Reserves.

Within the Green Area, the AFS administers three range improvement programs: (1) Public Grazing Land, (2) Kananaskis Country and (3) Forest Reserve Range Improvement Programs.

Public grazing land range improvement statistics are summarized in Table C3.

Table C3

PUBLIC GRAZING LAND RANGE IMPROVEMENT PROGRAM

Forest	Clearing & Piling (ha)	Breaking (ha)	Working Down (ha)	Repiling (ha)	Seeding and Fertilizing (ha)	Dugouts	Cross Fencing (km)
Athabasca	-	20	20	-	20	2	1.6
Bow/Crow	-	740	131	-	809	-	31.3
Edson	-	65	65	-	65	-	-
Grande Prairie	95	503	647	298	197	2	11.6
Lac La Biche	80	-	-	-	-	-	-
Peace River	80	-	-	-	165	-	1.6
Rocky/Clearwater	132	814	444	75	351	1	15.4
Slave Lake	44	166	-	-	166	-	2.4
Whitecourt	158	125	168	-	56	-	-
TOTAL	589	2 433	1 475	373	1 829	5	63.9

Kananaskis Country Range Improvement Program statistics are summarized in Table C4.

Table C4

KANANASKIS COUNTRY RANGE IMPROVEMENT PROGRAM

Allotments	Clearing and Piling (ha)	Salvage (ha)	Herbicide (ha)	Other (ha)
North Sheep	32	-	-	-
Fish Creek	-	-	-	.75km Fencing
Willow Creek	114	-	-	-
TOTAL	146	-	-	

In the Rocky Mountain Forest Reserve Range Improvement Program, four cattle guards were installed in the Upper Fallen Timber Allotment, 209 ha were cleared and piled on the Willow Creek Allotment (the area outside of the Kananaskis Country Range Improvement Program), 0.2 km of fencing were constructed on the Bragg Creek Allotment, 40 ha of mowing carried out on the Jumping Pound Allotment and one culvert installed on the South Sheep Allotment.

3. Petroleum and Natural Gas

An increased use of forest lands by the petroleum and natural gas industry was evidenced by a 19 percent increase in applications processed for land surface rights. Table C5 shows the applications processed by forest for the last five years.

Table C5

APPLICATIONS PROCESSED FOR LAND SURFACE RIGHTS FOR THE PETROLEUM AND NATURAL GAS INDUSTRY 1979-1984

Forest	1979-80	1980-81	1981-82	1982-83	1983-84
Athabasca	98	179	147	58	128
Bow/Crow	111	83	63	62	69
Edson	413	310	260	204	150
Footner Lake	345	210	254	432	389
Grande Prairie	628	402	321	236	305
Lac La Biche	458	607	448	207	263
Peace River	239	245	298	303	242
Rocky/Clearwater	374	183	148	164	318
Slave Lake	672	625	456	693	918
Whitecourt	721	483	354	365	455
TOTAL	4 059	3 327	2 749	2 724	3 237

In addition, 1 102 amendments and a total of 339 Sand and Gravel Dispositions and Miscellaneous Permits and Leases were approved and numerous holdings, land use restrictions and administrative reservations were processed.

Timber damage assessments on Land Dispositions - timber damage assessments were computed on 1 882 dispositions in 1983-84.

4. Watershed Management

As part of a continuing inventory program of precipitation and streamflow, a data network has been established. A total of 135 precipitation storage gauges and 23 water level recorders were collecting data in the Green Area in 1983-84. These are summarized by Forest in Table C6.

Table C6

PRECIPITATION AND STREAMFLOW NETWORK

Forest	Number of Precipitation Gauges	Frequency of Reading	Number of Water Level Recorders
Athabasca	1	semi-annually	
Bow/Crow	45	10 monthly 35 semi-annually	3
Edson	18	10 semi-annually 1 monthly 7 monthly in Tri-Creeks	5
Footner Lake	4	semi-annually	
Grande Prairie	19	semi-annually	7
Lac La Biche	2	semi-annually	
Peace River	2	semi-annually	
Rocky/Clearwater	22	3 monthly 19 semi-annually	8
Slave Lake	11	semi-annually	
Whitecourt	11	10 semi-annually 1 monthly	

5. Forest Recreation

The AFS has continued to play a dual role in outdoor recreation:

1. As a primary land manager, implementing land use/resource management legislation and policies to protect recreation values and to regulate recreation activities.

2. As a public service agency, delivering a forest recreation program to provide a wide range of resource-oriented, dispersed, extensive outdoor recreation opportunities within an integrated resource management framework.

To these ends, a variety of programs and facilities have been developed and are maintained by the AFS throughout the Green Area. These include small, low density auto access campgrounds and picnic areas, water access points, trail systems and staging areas for various activities, group camps and remote campsites. Basic services are provided at AFS Recreation Areas, such as toilets, garbage receptacles, firewood, tables, fire-rings, drinking water by hand pumps and boat launches where a facility is located on a water body.

A total of $730,000.00 was spent on upgrading and new construction in 1983-84, broken down as follows:

UPGRADING

Nine existing Forest Recreation Areas were upgraded this year.

Buffalo Tower Forest Recreation Area
Fish Lake Forest Recreation Area
*Grayling Creek Forest Recreation Area
Magua Lake Forest Recreation Area
McLeod River Forest Recreation Area
Running Lake Forest Recreation Area
Smoky River Forest Recreation Area
Two Lakes (North) Forest Recreation Area
Two O'Clock Creek Forest Recreation Area

In addition, 15 carry over upgrading projects were completed.

*Grayling Creek Forest Recreation Area is a newly constructed facility funded partly out of upgrading monies but also by Syncrude Canada Ltd. This was compensation for and to replace the Beaver Creek Forest Recreation Area which was destroyed as a result of the diversion of Beaver Creek during the construction of Syncrude Oil Sands project.

NEW CONSTRUCTION

No new construction of recreation facilities was undertaken by the Alberta Forest Service in 1983-84.

The following is a detailed listing of the formal Forest Recreation Areas (Tables C7, C8 and C9) operated and maintained by the AFS.

Table C7

FOREST RECREATION AREAS

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Athabasca	Cascade Rapids Remote	11	-	92 km E of Ft. McMurray
	Clausen's Landing Remote	2	-	115 km N of Ft. McMurray
	Dore Lake	17	10	15 km N of Ft. Chipewyan
	Engstrom Remote	2	-	73 km E of Ft. McMurray
	(Little) Fishery Creek	-	3	Ft. McMurray (Thickwood Heights)
	Magua Lake	13	25	40 km S of Ft. McMurray
	Miseieutin Remote	3	-	52 km E of Ft. McMurray
	Pearson Lake Remote	3	-	90 km N of Ft. McKay
	Whitemud Falls Remote	4	-	109 km E of Ft. McMurray
	TOTAL	55	38	
Bow/Crow	Allison Day Use	-	12	9 km NW of Crowsnest
	Allison Chinook X-C Skiing	-	20	9 km NW of Crowsnest
	Beaver Mines Lake	40	10	30 km SE of Crowsnest
	Bluerock	91	2	45 km W of Turner Valley
	Burnt Timber	20	8	65 km SW of Sundre
	Canyon Creek	-	-	23 km SW of Bragg Creek
	Cartier Creek	-	60	22 km SW of Sundre
	Castle Falls	49	10	18 km S of Crowsnest
	Castle River Bridge	30	6	25 km S of Crowsnest
	Cat Creek Day Use	-	13	45 km SW of Longview
	Cataract Creek	102	14	50 km SW of Longview
	Chinook	63	6	12 km NW of Crowsnest
	Deer Creek Day Use	-	10	45 km SW of Sundre
	Dutch Creek	42	9	30 km NE of Crowsnest
	Etherington Day Use	-	100	45 km SW of Longview
	Fallen Timber	59	50	80 km NW of Cochrane
	Gorge Creek Day Use	-	16	30 km W of Turner Valley
	Indian Grave	28	4	40 km S of Longview
	James-Wilson	15	10	40 km NW of Sundre
	Livingstone Falls	22	6	60 km N of Crowsnest
	Lynx Creek	30	6	15 km S of Crowsnest
	North Fork	24	10	15 km W of Millarville
	North Ghost	173	10	70 km NW of Cochrane
	Oldman River	16	8	40 km N of Crowsnest
	Racehorse Creek	37	8	25 km N of Crowsnest
	Red Deer River	66	12	55 km SW of Sundre
	Sandy McNabb	98	36	25 km W of Turner Valley
	Sheep Falls Day Use	-	8	40 km W of Turner Valley
	Sibbald Flats	134	15	15 km S of Morley
	South Ghost Snowmobile	-	12	43 km NW of Cochrane

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Bow/Crow cont'd	Syncline X-C Skiing	-	35	30 km S of Crowsnest
	Waiparous Creek	36	10	65 km NW of Cochrane
	Waiparous Valley Viewpoint	-	10	75 km NW of Cochrane
	Wildhorse	9	-	70 km W of Sundre
	TOTAL	1 184	546	
Edson	Big Berland	20	10	70 km NW of Hinton
	Cardinal River Divide	-	4	80 km SE of Hinton
	Cardinal River	20	-	91 km SE of Hinton
	Coalspur	8	4	10 km S of Robb
	Eccles Pond Day Use	-	8	45 km W of Edson
	Emerson Lakes	8	8	56 km NW of Hinton
	Fairfax Lake	-	15	105 km SW of Edson
	Fickle Lake	32	30	39 km SW of Edson
	Grande Cache (Blue Bridge)	22	10	1 km N of Grande Cache
	Grande Cache Lake Day Use	-	25	2 km N of Grande Cache
	Kinky Lake	10	-	22 km SW of Hinton
	Lambert Creek	7	4	40 km S of Edson
	Little Sundance Creek	6	10	26 km NW of Edson
	Lovett River	17	-	30 km SE of Coalspur
	Mason Creek Day Use	-	16	14 km E of Grande Cache
	McLeod River	21	10	26 km SE of Hinton
	Obed Lake	13	4	40 km W of Edson
	Pembina Forks	20	10	109 km S of Edson
	Pierre Greys Lakes	81	22	120 km NW of Hinton
	Pierre Greys X-C Skiing	-	35	120 km NW of Hinton
	Rock Lake	70	22	86 km NW of Hinton
	Steeper Water Access Point	2	-	16 km SW of Robb
	Watson Creek	39	-	112 km SW of Edson
	Whitehorse Creek	13	-	122 km SW of Edson
	Wildhorse Lake	13	8	25 km SW of Hinton
	TOTAL	422	255	
Footner Lake	Buffalo River Day Use	-	6	24 km SW of Rainbow Lake
	Buffalo Tower Day Use	-	10	50 km S of Ft. Vermilion
	Hutch Lake	11	11	36 km N of High Level
	Machesis Lake	21	15	60 km SE of High Level
	Meander River	8	11	80 km N of High Level
	Rainbow Lake	16	7	65 km S of Rainbow Lake
	Steen River	5	5	150 km N of High Level
	Tall Cree Crossing	8	15	60 km SE of Ft. Vermilion

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Footner Lake cont'd	Thurston Lake Remote	3	-	172 km NW of High Level
	TOTAL	72	80	
Grande Prairie	Bison Flats	21	10	110 km SW of Debolt
	Cut Bank River	4	4	100 km S of Grande Prairie
	Economy Lake	6	12	38 km S of Goodwin
	Hilltop Lake	-	15	26 km SW of Woking
	Musreau Lake	83	-	80 km S of Grande Prairie
	Nose Lake Remote	10	5	80 km SW of Grande Prairie
	Shuttler Flats	10	-	65 km SW of Grande Prairie
	Simonette River	24	35	19 km SW of Debolt
	Smoky River	5	25	35 km E of Grande Prairie
	Two Lakes	75	35	114 km SW of Grande Prairie
	Waskahigan	15	20	3 km NW of Little Smoky
	Westview	4	4	100 km SE of Grande Prairie
	TOTAL	257	165	
Lac La Biche	Calling River	8	-	130 km NE of Athabasca
	Crow Lake Remote	13	-	130 km S of Ft. McMurray
	House River	15	-	55 km N of Wandering River
	Ironwood Lake Day Use	-	21	58 km SE of Lac La Biche
	Jackson Lake Trail Staging Area	-	6	35 km E of Lac La Biche
	Marianna Lakes	14	10	90 km S of Ft. McMurray
	Mile 18 Lake	-	6	50 km N of Lac La Biche
	Pinehurst Lake	33	10	68 km SE of Lac La Biche
	Seibert Lake	33	15	77 km NW of Bonnyville
	Tanasiuk	20	10	130 km N of Athabasca
	Touchwood Lake	54	-	46 km NE of Lac La Biche
	Wandering River	14	3	90 km N of Boyle
	Winefred Lake Remote	-	5	SW shore of Winefred Lake
	Wolf Lake	59	6	56 km NW of Bonnyville
	TOTAL	263	92	
Peace River	Notikewin	10	-	90 km N of Hines Creek
	Ole's Lake	6	7	86 km W of Hines Creek
	Running Lake	16	20	70 km NW of Hines Creek
	Stoney Lake	13	8	32 km N of Hines Creek
	Sulphur Lake	11	11	78 km NW of Hines Creek
	TOTAL	56	46	

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Rocky/ Clearwater	Blackstone	8	-	30 km N of Nordegg
	Brazeau Reservoir	41	28	25 km SW of Lodgepole
	Brazeau River	10	6	72 km N of Nordegg
	Brown Creek	12	5	45 km N of Nordegg
	Brown Creek Viewpoint	-	6	45 km N of Nordegg
	Chambers Creek	26	6	30 km W of Rocky Mountain House
	Crescent Falls	5	-	18 km SW of Nordegg
	Elk Creek	11	5	65 km S of Nordegg
	Elk River	13	-	110 km N of Nordegg
	Fish Lake	95	40	8 km W of Nordegg
	Gold Eye Lake	44	-	11 km W of Nordegg
	Harlech	11	7	15 km E of Nordegg
	Haven Creek	8	6	14 km W of Nordegg
	Horberg Water Access Pt.	8	-	35 km W of Rocky Mountain House
	Jackfish Lake	5	-	45 km W of Rocky Mountain House
	Kootenay Plains (Two O'Clock Creek)	21	8	64 km W of Nordegg
	Medicine Lake	40	30	37 km NW of Rimbey
	Mitchell Lake	3	-	27 km S of Rocky Mountain House
	North Ram River	20	12	32 km S of Nordegg
	Peppers Lake	17	6	65 km S of Nordegg
	Phyllis Lake	8	-	16 km W of Caroline
	Pinto Lake Remote	6	-	Backcountry Site
	Prairie Creek	47	20	41 km SW of Rocky Mountain House
	Ram Falls	54	44	50 km S of Nordegg
	Saunders Water Access Pt.	5	-	28 km SE of Nordegg
	Seven Mile	38	15	80 km SW of Caroline
	Shunda Beaver Dam	7	12	3 km E of Nordegg
	Shunda Beaver Dam Overflow	87	-	3 km E of Nordegg
	South Fork Prairie Creek	8	-	28 km SW of Rocky Mountain House
	Strachan	23	14	24 km SW of Rocky Mountain House
	Struble Lake (Water Access Point)	-	15	30 km S of Rocky Mountain House
	Swan Lake	16	6	65 km SW of Rocky Mountain House
	Thompson Creek	59	6	87 km SW of Nordegg
	Upper Shunda Creek	21	18	3 km NW of Nordegg
	TOTAL	777	315	
Slave Lake	Lawrence Lake	27	30	48 km NW of Athabasca
	North Wabasca	33	14	142 km N of Slave Lake
	Peerless Lake	18	-	241 km NE of Slave Lake
	West Fawcett Lake	28	23	27 km N of Smith
	TOTAL	106	67	

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Whitecourt	Freeman River	10	5	16 km S of Swan Hills
	Iosegun Lake	32	9	11 km N of Fox Creek
	Smoke Lake	47	23	13 km SW of Fox Creek
	Swan Hills (Freeman Lake)	10	-	8 km W of Swan Hills
	Wolf Lake	27	5	69 km SE of Edson
	TOTAL	126	42	

Table C8

GROUP CAMPGROUNDS

FOREST	NAME	SHELTER	WATER WELL	HORSE CORRALS	LOCATION
Athabasca	Magua Lake		X		40 km S of Ft. McMurray
Bow/Crow	Ghost Airstrip	X	X		68 km NW of Cochrane
	Highwood	X	X		35 km SW of Longview
	North Fork (Equestrian)	X	X	X	15 km W of Millarville
	North Ghost	X	X		70 km NW of Cochrane
	Oldman River (Equestrian)	X	X	X	40 km N of Crowsnest
	Pine Grove A	X	X		50 km SW of Calgary
	Pine Grove B	X	X		50 km SW of Calgary
	Sandy McNabb A	X	X	X	25 km W of Turner Valley
	Sandy McNabb B	X	X		25 km W of Turner Valley
	Syncline A	X	X		28 km S of Crowsnest
	Syncline B	X	X		28 km S of Crowsnest
	Waiparous Creek	X	X		65 km NW of Cochrane
Edson	Embarras River	X	X		37 km SW of Edson
	Wild Hay River	X			48 km NW of Hinton
Grande Prairie	Shuttler Flats	X	X		50 km SW of Grande Prairie
Lac La Biche	Shaw Lake	X	X		30 km E of Lac La Biche
Peace River	Sulphur Lake	X	X		78 km NW of Hines Creek
Rocky/ Clearwater	Cavalcade A		X		64 km W of Nordegg
	Cavalcade B		X		64 km W of Nordegg
	Cavalcade C		X		64 km W of Nordegg
	Chambers Creek	X	X		30 km W of Rocky Mtn. House
	Prairie Creek	X	X		41 km SW of Rocky Mtn. House
	Snow Creek	X			16 km W of Nordegg
	Upper Shunda	X			3 km NW of Nordegg

Table C9

SUMMARY OF DEVELOPED RECREATION AREAS AND FACILITIES BY FOREST

FOREST	AUTO-ACCESS CAMP-GROUNDS	CAMPING UNITS	DAY USE UNITS	GROUP CAMPS	REMOTE CAMPSITES	BACKCOUNTRY CAMPSITES (ON TRAILS OR RIVERS)	WATER ACCESS POINTS	OVERFLOW AREAS	TRAILS (km)
Athabasca	2	55	38	1	1	6	-	-	50
Bow/Crow	27	1 174	558	11	-	4	1	1	1 090
Edson	19	422	255	2	-	-	1	-	380
Footner Lake	6	72	80	-	1	-	-	-	-
Grande Prairie	6	257	165	1	-	-	2	-	65
Lac La Biche	8	263	92	1	2	-	2	-	-
Peace River	4	56	46	1	-	-	-	-	-
Rocky/Clearwater	28	777	315	7	-	-	2	2	190
Slave Lake	4	106	67	-	-	-	-	-	-
Whitecourt	5	126	42	-	-	-	-	-	245
TOTAL	109	3 308	1 658	24	4	10	8	3	2 020

Funds for operation and maintenance of the above recreation developments totalled approximately $2.5 million.

6. Geophysical

The timber damage assessment rate for new clearing in the Green Area remained at $214.03 per hectare. The rate for re-use of existing line remained at $46.19 per hectare. These rates are established by the Timber Management Branch and are directly related to the average rate of timber dues for the previous year. Exploration activity for geophysical applications are summarized in Table C10.

Table C10

EXPLORATION ACTIVITY FOR OIL AND GAS ON PUBLIC FOREST LANDS, 1972-1984 GEOPHYSICAL APPLICATIONS

Year	Preliminary Plans Approved	New Lines Cut (km)	Existing Lines Used (km)
1972-73	273	3 605	3 513
1973-74	401	3 953	4 365
1974-75	205	2 554	2 541
1975-76	325	2 148	3 714
1976-77	387	5 786	5 641
1977-78	639	9 551	9 310
1978-79	743	11 076	10 796
1979-80	676	10 048	9 788
1980-81	643	16 333	13 681
1981-82	652	14 644	14 078
1982-83	689	17 720	37 633
1983-84	837	*19 000	*30 000

* Estimated

7. Revenue

Timber damage assessments, forest protection levies and Crown Dues amounted to approximately $4 350 000 (estimated) for 1983-84.

D. FOREST PROTECTION

1. Introduction

During the 1983 fire season 756 fires burned 2 263 ha. Whereas the number of fires was just below the ten year average, the total area burned was the lowest in the last ten years. Although this low fire loss can be attributed in part to weather conditions which brought significant relief to some portions of the Province, we had experienced severe drought during the early 1980's, an equal factor was the apparent success of the newly formalized preparedness systems which resulted in rapid and successful initial attack on a large number of fires.

Table D1

TEN YEAR SUMMARY
COMPARISON OF FIRE CAUSES BY
PERCENTAGES
1974-1983

CAUSE	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Recreation	14.5	26.4	17.6	26.4	19.3	23.2	10.1	14.7	13.2	18.8
Resident	5.5	11.4	13.4	10.4	7.4	4.3	14.8	8.8	9.9	12.6
Railroads	1.2	2.2	1.4	4.5	3.7	0.5	1.4	1.4	2.0	1.3
Lightning	46.2	29.3	23.8	23.7	42.4	51.8	45.2	55.4	55.4	41.8
Forest industry	3.3	3.3	3.6	2.5	0.8	1.0	1.8	1.1	0.4	2.5
Other industry	4.5	3.2	6.2	9.4	6.0	6.9	8.0	4.3	5.6	7.9
Incendiary	6.4	8.5	20.8	9.4	8.0	5.7	9.0	4.5	4.2	6.2
Unclassified	8.2	10.4	7.5	10.3	8.9	5.1	8.0	6.4	6.9	5.8
Unknown	6.9	3.0	4.4	1.1	2.0	1.5	1.9	2.4	2.4	3.0
Public project	3.3	2.3	1.3	2.3	1.7	*				

* As of 1979 all public project fires were included in Other industry.

Table D2

FIVE-YEAR SUMMARY
AIRCRAFT
1979-1983

	1979		1980		1981		1982		1983	
All Aircraft	No.	Hour	No.	Hour	No.	Hour	No.	Hour	No.	Hour
Helicopters	125	8 237	206	27 525	248	38 311	251	42 659	177	21 146
Fixed Wing	122	4 825	140	11 311	198	9 149	155	11 224	104	8 981
Air Tankers	17	1 633	48	4 415	52	5 281	40	3 306	18	808
TOTAL	264	14 695	394	43 251	498	52 741	446	57 189	299	30 935

Table D3

TEN-YEAR SUMMARY
FIRES
1974-1984

Year	Total Fires	*Non-Forested (ha)	*Forested (ha)	*Total Area (ha)	Suppression Costs
1974	598	2 299	15 689	18 392	5 619 951
1975	693	1 632	4 156	5 789	3 951 032
1976	774	5 313	17 124	22 473	3 681 894
1977	556	6 049	3 981	10 030	1 176 666
1978	653	5 017	2 773	17 790	2 787 901
1979	1 000	509	194 088	194 597	8 679 644
1980	1 348	204 054	465 106	669 159	26 805 764
1981	1 522	419 928	943 784	1 363 712	51 835 642
1982	1 257	219 576	458 031	677 607	55 912 000
1983	756	1 048	1 215	2 263	4 294 476

* Crown Land Only

Table D4

SUMMARY OF FOREST FIRE LOSSES

	CLASS OF FIRE						LANDS AFFECTED - HECTARES						VOLUME LOSS		SUPPRESSION COSTS
							Crown Lands								
	A	B	C	D	E	TOTAL	Merch. Timber	Potent. Prod.	Non Prod.	Total Crown land	Priv. Area	Total Area	Timber m^3	Other m^3	Total $
Athabasca	53	28	3	-	-	84	11.8	7.7	14.0	33.5	10.0	43.5	-	1 633	222 335
Bow/Crow	53	10	1	1	-	65	-	11.6	47.5	59.1	1.8	60.9	-	-	74 508
Edson	37	18	3	-	-	58	10.0	6.4	2.2	18.6	25.1	43.7	-	40	30 590
Footner Lake	88	64	7	2	-	161	140.8	2.7	10.8	154.3	85.6	239.9	-	-	1 299 582
Grande Prairie	15	13	2	-	-	30	0.9	9.5	5.5	15.9	25.4	41.3	901	-	118 540
Lac La Biche	52	25	12	-	1	90	132.7	31.2	340.1	504.0	86.6	590.6	7 106	7 106	711 624
Peace River	28	16	5	-	-	49	18.5	4.9	12.0	35.4	50.1	85.5	1	-	450 090
Rocky/Clearwater	35	10	1	-	-	46	9.7	0.1	1.0	10.8	7.0	17.8	-	10	48 472
Slave Lake	53	27	8	1	1	90	10.1	51.8	442.1	504.0	99.6	603.6	-	-	273 133
Whitecourt	54	17	9	2	1	83	738.0	16.9	173.2	928.1	162.8	1 090.9	6 785	40 546	1 065 602
TOTAL FORESTS	468	228	51	6	3	756	1 072.5	142.8	1 048.4	2 263.7	554.0	2 817.7	14 793	49 335	4 294 476
														Prevention, Presuppression and Preparedness Costs	31 882 090
														TOTAL	36 176 566

Table D5

STATEMENT OF FIRES BY CAUSE, DISCOVERY AGENT, DAMAGE AND AREA BURNED

CAUSE	DISCOVERED BY					$ DAMAGE		LAND IN HECTARES		
	Towers	Public	Forest Officers	Aircraft	Other	Productive	Potential	Crown	Private	Total
Lightning	147	19	-	92	58	44 803	-	307.4	0.4	307.8
Resident	37	33	12	11	2	208 439	-	1 266.1	332.3	1 598.4
Forest Industry	8	5	1	1	4	10 127	-	7.4	3.5	10.9
Other industry	26	22	3	5	4	365	424	69.7	17.2	86.9
Railroad	4	6	-	-	-	-	-	2.2	8.2	10.4
Recreation	13	96	19	4	10	3 094	12	105.7	9.3	115.0
Incendiary	8	22	9	6	2	-	4	89.9	50.9	140.8
Misc. known	13	25	3	3	-	39 835	2 000	412.0	90.1	502.1
Unknown	3	13	1	2	4	-	-	3.3	42.1	45.4
TOTALS	259	241	48	124	84	306 663	2 440	2 263.7	554.0	2 817.7
PERCENTAGE	34.3	31.9	6.3	16.4	11.1			80.3	19.7	

Table D6

STATEMENT OF FIRES BY CAUSE, MONTHLY DISTRIBUTION ETC.

CAUSE	NUMBER							MONTHLY DISTRIBUTION											
	A	B	C	D	E	TOTAL	%	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Lightning	217	85	12	2	-	316	41.8	-	-	-	7	15	144	96	52	2	-	-	-
Resident	39	36	17	1	2	95	12.6	6	1	2	27	33	10	3	7	-	5	1	-
Forest industry	12	7	-	-	-	19	2.5	1	-	1	-	2	2	-	2	7	-	3	1
Other industry	36	18	6	-	-	60	7.9	2	-	-	11	18	5	8	9	1	4	-	2
Railroad	3	7	-	-	-	10	1.3	-	-	-	2	3	1	2	-	2	-	-	-
Recreation	107	28	6	1	-	142	18.8	1	3	2	11	26	14	3	12	32	29	9	-
Incendiary	23	18	5	1	-	47	6.2	-	1	-	9	18	8	3	2	5	1	-	-
Misc. known	18	22	2	1	1	44	5.8	-	-	-	10	18	8	1	3	2	2	-	-
Unknown	13	7	3	-	-	23	3.0	-	-	-	6	6	5	-	3	1	2	-	-
TOTALS	468	228	51	6	3	756	100.0	10	5	5	83	139	197	116	90	52	43	13	3
%	61.9	30.2	6.7	0.8	0.4	100		1.3	0.7	0.7	11.0	18.4	26.1	15.3	11.9	6.9	5.7	1.7	0.4

HECTARES BY SIZE CLASS: A: 0.0 B: 262.3 C: 559.3 D: 330.5 E: 1 665.6

TOTAL ha BY MONTHS:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	5.7	0.0	1.4	833.3	1 198.8	525.8	95.5	44.9	22.3	35.5	50.2	4.3

E. FOREST RESEARCH

1. Introduction

In-house research programs were carried out in three major problem areas; reforestation and nursery, watershed and site classification. A modest new program was also initiated regarding the stand dynamics of managed forests.

Funds were provided to other research agencies in the form of contracts and grants for the enhancement of research activities where our own expertise or facilities were not available. Some of these research studies included the following topics; development of stand growth model for mixedwood stands, development and testing of pheromones against mountain pine beetles, design of drainage systems for forested peatland, development and testing of biological repellants for reduction of hare damage in plantations and applications of beneficial fungi.

Table E1

RESEARCH EXPENDITURES

Source of Funding	Number of Projects Funded	Total Expenditures $
Forest Development Research Trust Fund	10	190 693
Research Contracts	17	352 083
TOTAL	27	542 776